

REMARKS

Present Status of the Application

Applicant thanks the Examiner for the thorough examination of this application. However, claims 3, 5 and 7 are objected to in the current Office action. Claims 1-3 are rejected under 35 U.S.C. Section 103(a) as being assertedly unpatentable over Lee (US Pub. No. 2005/0083279; hereinafter "Lee") in view of Noguchi (US Pat. No. 7,084,849; hereinafter "Noguchi"). Claims 5-7 are rejected under 35 U.S.C. Section 103(a) as being assertedly unpatentable over Lee (US Pat. No. 6,982,690; hereinafter "Lee '690") in view of Noguchi.

In response thereto, Applicant has rewritten the claims and submitted the amended claims as newly-added claims 8-11 to clarify the claimed subject matter. Correspondingly, claims 1-7 have been canceled. The newly added claims 8-11 are fully supported by the present specification without adding new matter. After entry of the foregoing amendments, claims 8-11 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of the claim objections

Claims 3, 5 and 7 are objected by the current Office Action.

In response thereto, Applicant has submitted newly-added claims 8-11 to clarify the claimed subject matter without adding new matter, so that the claim objections as set forth in current Office action should be rendered moot accordingly.

Discussion of Claim Rejections under 35 U.S.C. 103

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Noguchi. Claims 5-7 are rejected under 35 U.S.C. Section 103(a) as being assertedly unpatentable over Lee '690 in view of Noguchi.

In response thereto, Applicant has rewritten the claims and submitted the amended claims as newly-added claims 8-11 to clarify the claimed subject matter, upon which Applicant hereby otherwise traverses these rejections after entry of the proposed amendments. Specifically, Applicant respectfully submits that the present application as set forth in newly amended claims 8-11 is novel and patentable over Lee, Noguchi, Lee '690, or any of the other cited references, taken alone or in combination, and thus should be allowed.

With respect to the currently amended claims 8 and 11, they respectively recite in all below:

8. A pixel array, comprising:

M*N pixels, each row of the pixels having a plurality of pixel sets, wherein:

the j^{th} and the $(j+1)^{\text{th}}$ pixel sets of the i^{th} row of the pixels substantially have different driving polarity, where i and j are positive integers;

the j^{th} and the $(j+1)^{\text{th}}$ pixel sets of the $(i+1)^{\text{th}}$ row of the pixels substantially have different driving polarity;

the j^{th} pixel set of the i^{th} row of the pixels and the j^{th} pixel set of the $(i+1)^{\text{th}}$ row of the pixels substantially have different driving polarity; and

the $(j+1)^{\text{th}}$ pixel set of the i^{th} row of the pixels and the $(j+1)^{\text{th}}$ pixel set of

the $(i+1)^{\text{th}}$ row of the pixels substantially have different driving polarity;

a plurality of data lines for respectively providing a corresponding pixel voltage, wherein **the polarity of the pixel voltage provided by the k^{th} data line is opposite to the polarity of the pixel voltage provided by the $(k+1)^{\text{th}}$ data line, where k is a positive integer**; and

a plurality of gate lines, wherein the r^{th} gate line is used for turning on all odd pixels in the j^{th} and the $(j+1)^{\text{th}}$ pixel sets of the i^{th} row of the pixels and all even pixels in the j^{th} and the $(j+1)^{\text{th}}$ pixel sets of the $(i+1)^{\text{th}}$ row of the pixels, where r is a positive integer.

10. A pixel array, comprising:

$M \times N$ pixels, each row of the pixels having a plurality of pixel sets, wherein:

all of the pixel sets in the i^{th} row of the pixels substantially have same driving polarity, where i is a positive integer;

all of the pixel sets in the $(i+1)^{\text{th}}$ row of the pixels substantially have same driving polarity; and

all of the pixel sets in the i^{th} row of the pixels and all of the pixel sets in the $(i+1)^{\text{th}}$ row of the pixels substantially have different driving polarity;

a plurality of data lines for respectively providing a corresponding pixel voltage, wherein **the polarity of the pixel voltage provided by the k^{th} data line is opposite to the polarity of the pixel voltage provided by the $(k+1)^{\text{th}}$ data line**, where k is a positive integer; and

a plurality of gate lines, wherein the r^{th} gate line is used for turning on all odd

pixels in each pixel set of the i^{th} row of the pixels and all even pixels in each pixel set of the $(i+1)^{\text{th}}$ row of the pixels, where r is a positive integer.

On the page 2 of the current Office action, the Examiner has asserted that the subject matter of the instant invention “might be different and distinguishable from the prior arts of record”, but such subject matter is not deemed presented in the claims adequately. Accordingly, Applicant has rewritten the claims and submitted the amended claims as newly-added claims 8-11 to clarify the claimed subject matter without adding new matter.

Applicant respectfully submits that the present invention is directed to a pixel array using line inversion driving method or $3N*1$ inversion driving method for reducing the cross talk effect on condition that adjacent data lines alternately provide opposite pixel voltages in mutually reverse polarities (for example, $+ - + - + - + -$ or $- + - + - + -$), so as to achieve the purpose that the coupling capacitances of two adjacent data lines at right and left sides of each pixel are substantially subtracted, and thereby the aperture ratio of each pixel and the stability of displaying the gray scale picture are enhanced at the same time.

Please refer to the features of the newly added claim 8 as presented above in bold print. It is clearly known that the structure of the pixel array and the pixel voltages provided by two adjacent data lines at right and left sides of each pixel are opposite to each other, so that when the pixel array conducts the $3N*1$ inversion driving method, the purpose of reducing the cross talk effect is achieved so as to enhance the aperture ratio of

each pixel and the stability of displaying the gray scale picture at the same time.

Similarly, please refer to the features of the newly added claim 10 as presented above in bold print. It is clearly known that the structure of the pixel array and the pixel voltages provided by two adjacent data lines at right and left sides of each pixel are opposite to each other, so that when the pixel array conducts the line inversion driving method, the purpose of reducing the cross talk effect is also achieved so as to enhance the aperture ratio of each pixel and the stability of displaying the gray scale picture at the same time.

However, according to the teachings of Lee, Noguchi, and Lee '690 cited by the Examiner, the pixel array taught therein **is not able** to conduct the $3N*1$ inversion driving method or the line inversion driving method for reducing the cross talk effect on condition that the adjacent data lines alternately provide opposite pixel voltages in mutually reverse polarities, i.e., “+ - + - + - + -” or “- + - + - + -.”

Therefore, Applicant respectfully submits that the newly added claims 8 and 10 are novel and patentable over Lee, Noguchi, Lee '690, or any other cited references, taken alone or in combination, and thus should be allowed.

If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). As a result, since the newly added claims 9 and 11 are respectively depending on the allowable independent claims 8 and 10, the newly added claims 9 and 11 also should be allowed as a matter of law.

CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 8-11 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,

Belinda Lee

Belinda Lee

Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email: belinda@jciigroup.com.tw
Usa@jciigroup.com.tw